



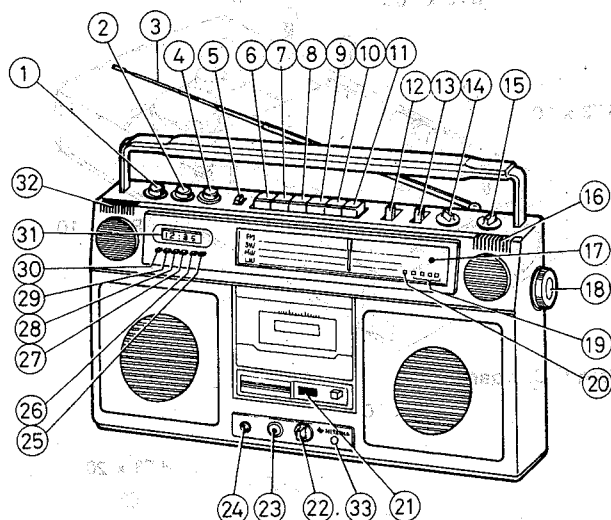
HITACHI

TRK-8110E, E(BS)

SERVICE MANUAL

No. 1276

KEY TO ILLUSTRATIONS



- | | |
|-------------------------------|-----------------------------------|
| ① BASS CONTROL | ①⑦ FM STEREO INDICATOR |
| ② TREBLE CONTROL | ①⑧ TUNING CONTROL |
| ③ TELESCOPIC ANTENNA (AERIAL) | ①⑨ LEVEL INDICATOR (LED) |
| ④ VOLUME CONTROL (L, R) | ②⑦ OPERATION INDICATOR |
| ⑤ MODE SWITCH | ②⑧ TAPE COUNTER |
| ⑥ PAUSE BUTTON | ②⑨ MIXING VOLUME CONTROL |
| ⑦ FAST-FORWARD/CUE BUTTON | ②⑩ MIXING SOCKET |
| ⑧ REWIND/REVIEW BUTTON | ②⑪ HEADPHONE SOCKET |
| ⑨ PLAYBACK BUTTON | ②⑫ SLEEP OFF/SNOOZE BUTTON |
| ⑩ RECORD BUTTON | ②⑬ SLEEP ON BUTTON |
| ⑪ STOP/EJECT BUTTON | ②⑭ TIMER SET BUTTON |
| ⑫ TAPE SELECTOR SWITCH | ②⑮ TIME SET BUTTON |
| ⑬ POWER SWITCH | ②⑯ MINUTE SET BUTTON |
| ⑭ FUNCTION SELECTOR | ②⑰ HOUR SET BUTTON |
| ⑮ BAND SELECTOR | ②⑱ TIMER DISPLAY |
| ⑯ BUILT-IN MICROPHONE (RIGHT) | ③① BUILT-IN MICROPHONE (LEFT) |
| | ③② AC POWER INDICATOR [FOR E(BS)] |

SPECIFICATIONS

GENERAL SECTION

Semi-conductors: IC's: 8
Transistors: 11
Diodes: 16
LED's: 2

Power (Mains) Supply: AC: 220V, 50 Hz [For E]
240V, 50 Hz [For E(BS)]
DC: 12V (IEC R20 x 8 or equivalent)

Power (Mains) Consumption: 18W

Dimensions: 455(W) x 255(H) x 148(D)

Weight: 5.2 kg (with batteries)

Power output: 4 w/ch (T.H.D. 10%)

Speaker: 120 mm, 3.2 ohms x 2
50 mm, 8 ohms x 2

TUNER SECTION

Circuit System: FM/SW/MW/LW 4-band superheterodyne

Tuning Range: FM: 87.5 to 108 MHz
SW: 6.0 to 18 MHz
MW: 530 to 1605 kHz
LW: 150 to 350 kHz

Sensitivity: FM: 10 dB (pra.) 0 dB (max.)
SW: 30 dB (pra.) 20 dB (max.)
MW: 45 dB (pra.) 35 dB (max.)
LW: 55 dB (pra.) 40 dB (max.)

Intermediate Frequency: FM: 10.7 MHz
SW/MW/LW: 465 kHz

Antennas (Aerials):

FM/SW: Telescopic antenna
MW/LW: Built-in ferrite-core antenna

TAPE RECORDER

Tape: Cassette tape (C-30, 60, 90)
Tape Speed: 4.75 cm/s
Recording System: AC bias
Erasing System: Quasi-AC erase
Track System: 4 track 2 channel
Frequency Response: Normal: 50 Hz to 10 kHz
CrO₂: 50 Hz to 12 kHz

S/N (Signal to Noise Ratio):

45 dB

WoW and Flutter:

0.1% (WRMS)

Cross Talk:

50 dB

Erase Ratio:

60 dB

Input Sensitivity and Impedance:

Microphone: 5 mV, 10 kohms
Record/playback (DIN): 60 mV, 50 kohms

Output Level and Impedance:

Record/playback (DIN): 500 mV, 5 kohms
EXT. Speaker: 3.2 ohms

Fast Forward or Rewinding Time:

120 sec. (Using C-60)

Distortion:

5%

Motor:


DC Micro motor

CASSETTE TAPE RECORDER WITH FM/SW/MW/LW RADIO

Oct. 1979

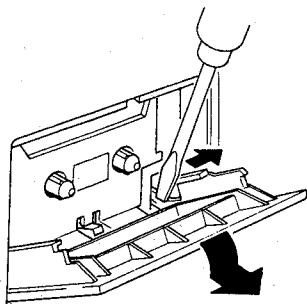
SAFETY PRECAUTION

The following precautions should be observed when servicing.

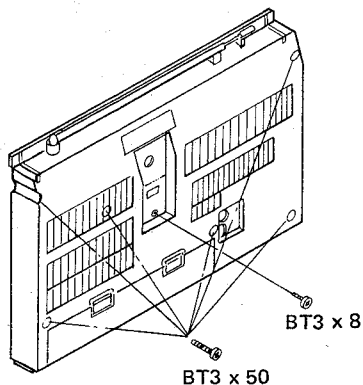
1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with  in the schematic diagram, and circuit board diagram.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

DISASSEMBLY

1. Cassette lid

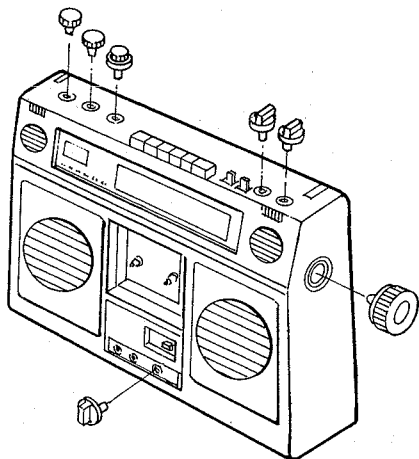


2. Rear case

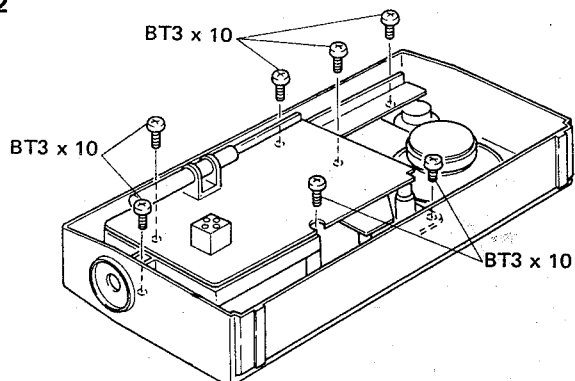


3. Main chassis

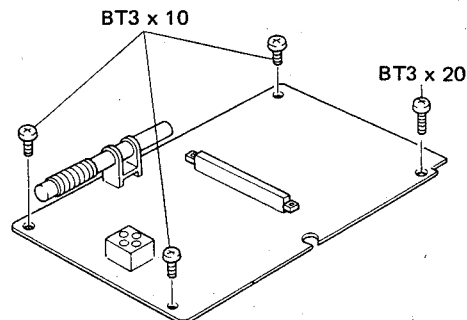
3-1



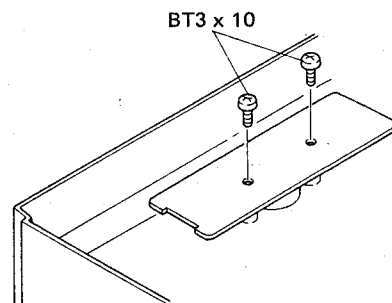
3-2



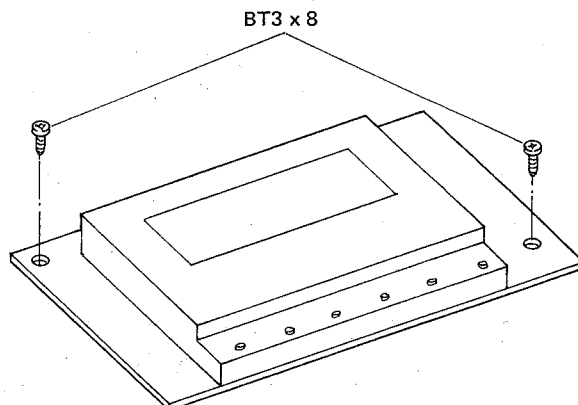
4. Main P.C. board



5. Mix P.C. board

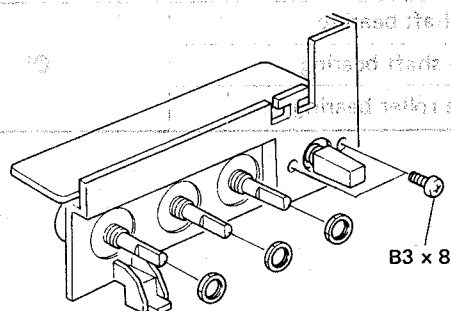


6. Timer P.C. board

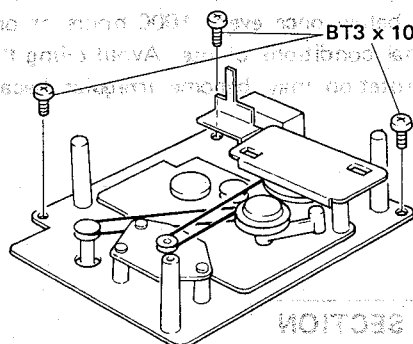


LUBRICATION

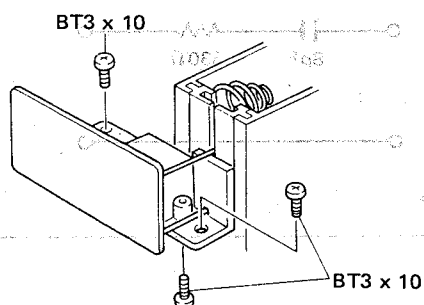
7. Volume P.C. board



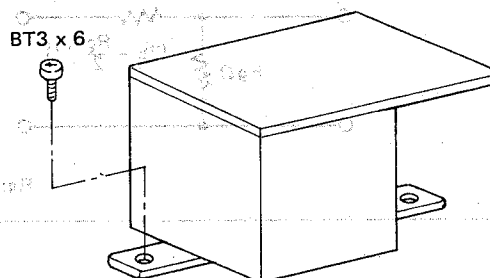
9. Cassette chassis



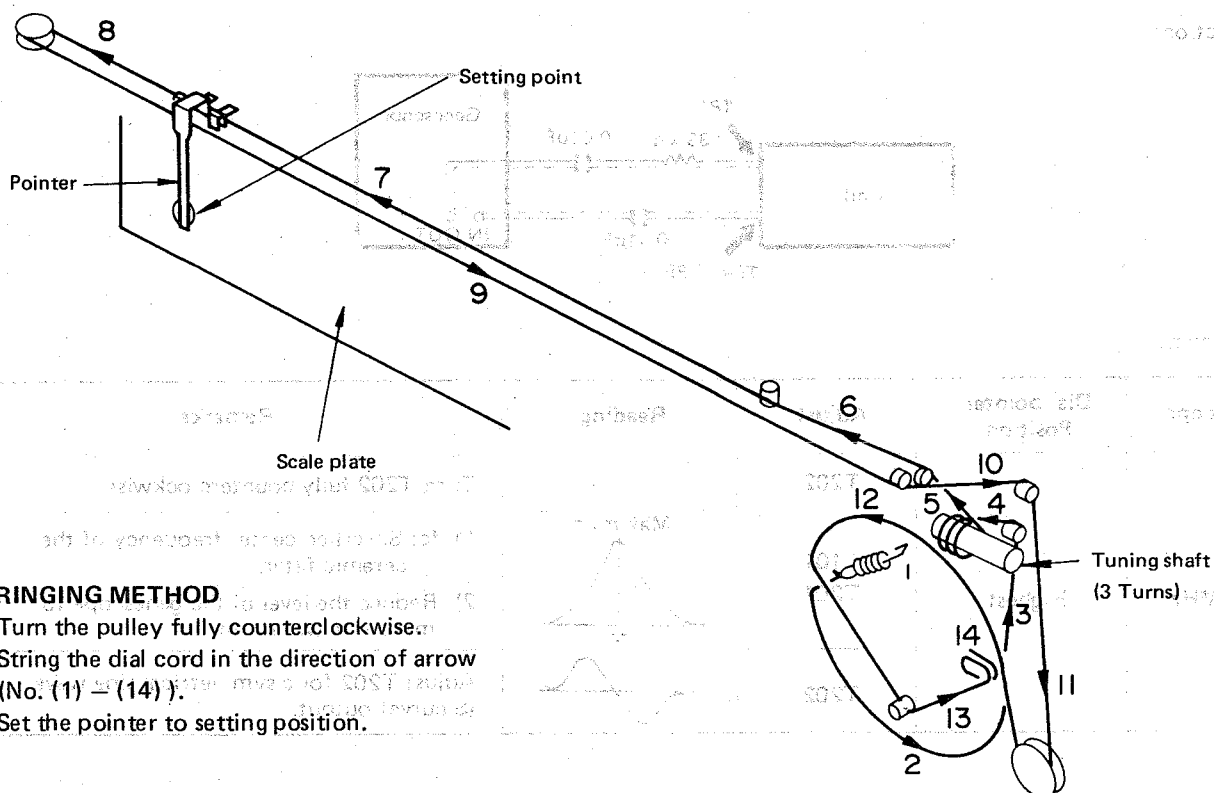
8. Power P.C. board



10. Head phone P.C. board



DIAL CORD STRINGING



STRINGING METHOD

1. Turn the pulley fully counterclockwise.
2. String the dial cord in the direction of arrow (No. (1) - (14)).
3. Set the pointer to setting position.

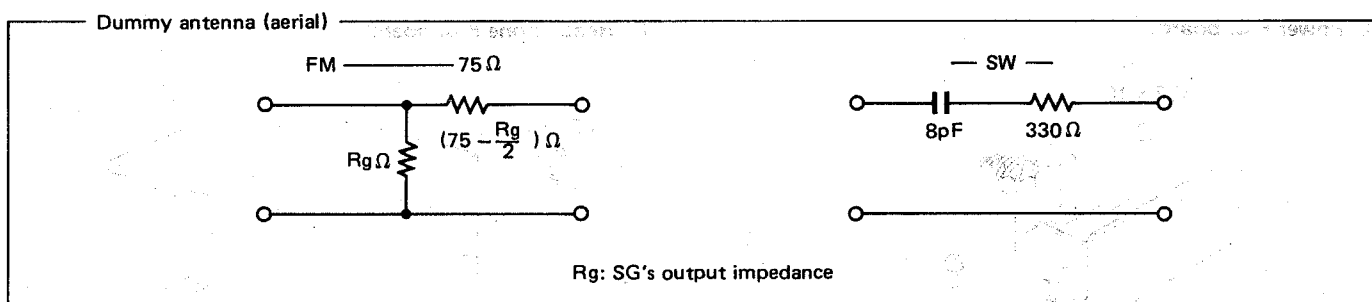
LUBRICATION

Lubricate one or two drops of machine oil to rotating point or lubricate grease to sliding point. Lubricate the respective parts listed below once every 1000 hours or once a year under normal conditions of use. Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

| Lubrication | Oil or grease |
|-------------------------|---------------|
| Motor shaft bearing | Oil |
| Capstan shaft bearing | |
| Pressure roller bearing | |

ADJUSTMENT

TUNER SECTION

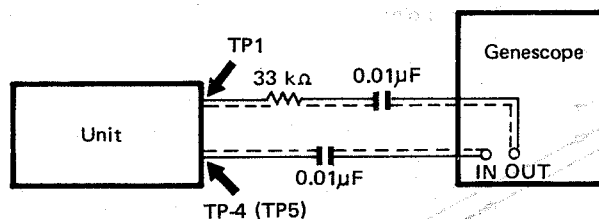


1. FM IF adjustment

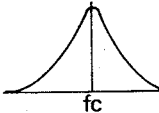
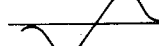
Setting:

- Function selector: RADIO ● Band selector: FM
- Mode switch: MONO

Connection:



Adjustment:

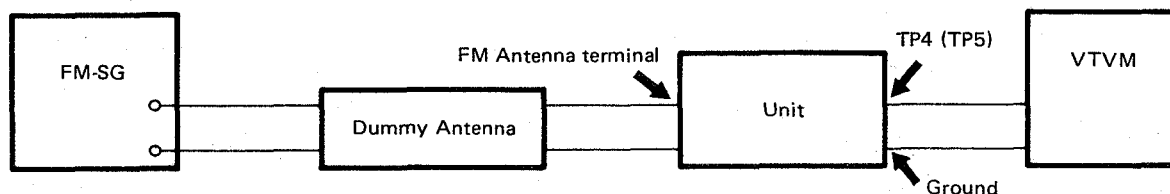
| Genescope | Dial pointer Position | Adjust | Reading | Remarks |
|-----------|-----------------------|--------------|--|--|
| 10.7 MHz | Highest | T202 | — | Turn T202 fully counterclockwise. |
| | | T101 T201 | Maximum  | 1) fc: Specified center frequency of the ceramic filter. 2) Reduce the level of the genescope to make one waveform. |
| | | T202 |  | Adjust T202 for a symmetrical sine wave (S curve) output. |

2. FM RF (Covering and Tracking) adjustment

Setting:

- Function selector: RADIO ● Band selector: FM
- Mode switch: MONO

Connection:



Adjustment:

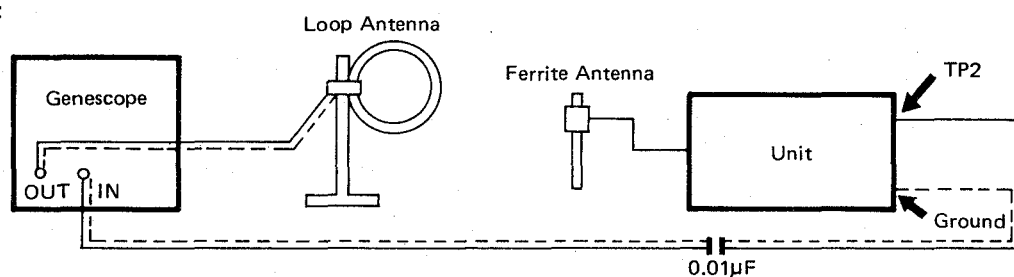
| Item | | Signal generator | | Dial pointer Position | Adjust | Reading | Remarks |
|------|-----------------|------------------|------------|-----------------------|--------|---------|---------|
| | | Frequency | Modulation | | | | |
| 1 | Covering | 87.5 MHz | 400 Hz 30% | Lowest | L103 | Max. | — |
| 2 | | 108 MHz | | Highest | CT102 | | |
| 3 | Repeat 1 and 2. | | | | | | |
| 4 | Tracking | 90 MHz | 400 Hz 30% | 90 MHz | L101 | Max. | |
| 5 | | 106 MHz | | 106 MHz | CT101 | | |
| 6 | Repeat 4 and 5. | | | | | | |

3. AM IF adjustment

Setting:

- Function selector: RADIO
- Band selector: MW

Connection:



Adjustment:

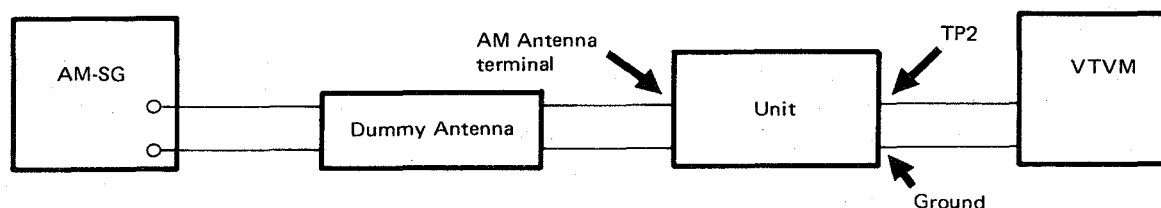
| Genescope | | Dial pointer Position | Adjust | Reading | Remarks |
|-----------|------------|-----------------------|----------------------|---------|---------|
| Frequency | Modulation | | | | |
| 465 kHz | — | Highest | T151 T152 T203 | Max. | — |

4. SW RF (Covering and Tracking) adjustment

Setting:

- Function selector: RADIO
- Band selector: SW

Connection:



Adjustment:

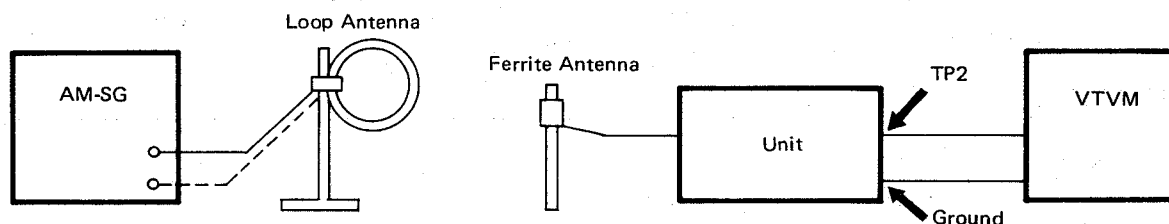
| Item | | Signal generator | | Dial pointer position | Adjust | Reading | Remarks |
|------|-----------------|------------------|------------|-----------------------|--------|---------|---------|
| | | Frequency | Modulation | | | | |
| 1 | Covering | 5.8 MHz | 400 Hz 30% | Lowest | L154 | Max. | |
| 2 | | 18.5 MHz | | Highest | CT154 | | |
| 3 | Repeat 1 and 2. | | | | | | |
| 4 | Tracking | 6.5 MHz | 400 Hz 30% | 6.5 MHz | L151 | Max. | |
| 5 | | 16 MHz | | 16 MHz | CT151 | | |
| 6 | Repeat 4 and 5. | | | | | | |

5. MW/LW RF (Covering and Tracking) adjustment

Setting:

- Function selector: RADIO
- Band switch: MW or LW

Connection:



Adjustment:

1) MW

| Item | | Signal generator | | Dial pointer Position | Adjust | Reading | Remarks |
|------|-----------------|------------------|------------|-----------------------|--------|---------|---------|
| | | Frequency | Modulation | | | | |
| 1 | Covering | 515 kHz | 400 Hz 30% | Lowest | L155 | Max. | — |
| 2 | | 1650 kHz | | Highest | CT155 | | |
| 3 | Repeat 1 and 2. | | | | | | |
| 4 | Tracking | 600 kHz | 400 Hz 30% | 600 kHz | L152 | Max. | |
| 5 | | 1400 kHz | | 1400 kHz | CT152 | | |
| 6 | Repeat 4 and 5. | | | | | | |

2) LW

| Item | | Signal generator | | Dial pointer Position | Adjust | Reading | Remarks |
|------|-----------------|------------------|------------|-----------------------|--------|---------|---------|
| | | Frequency | Modulation | | | | |
| 1 | Covering | 145 kHz | 400 Hz 30% | Lowest | L156 | Max. | |
| 2 | | 360 kHz | | Highest | CT156 | | |
| 3 | Repeat 1 and 2. | | | | | | |
| 4 | Tracking | 160 kHz | 400 Hz 30% | 160 kHz | L153 | Max. | |
| 5 | | 330 kHz | | 330 kHz | CT153 | | |
| 6 | Repeat 4 and 5. | | | | | | |

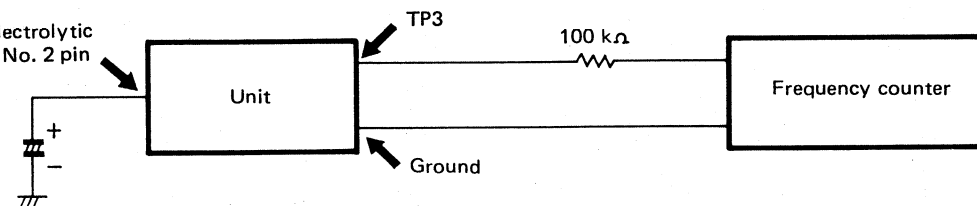
6. FM MPX (Multiplex) adjustment

Setting:

- Function selector: RADIO
- Band switch: FM
- Mode switch: STEREO

Connection:

Connect a 10 μ F 25V electrolytic capacitor between the No. 2 pin of IC301 and Ground.



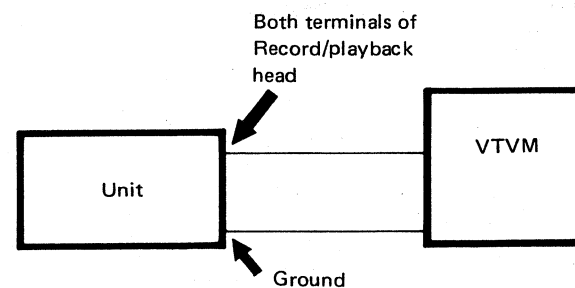
Adjustment:

| Adjust | Reading | Remarks |
|--------|---------------------|---------|
| RT301 | 19 kHz \pm 100 Hz | — |

TAPE DECK SECTION**1. Bias current adjustment**

Setting: Recording mode

Connection:

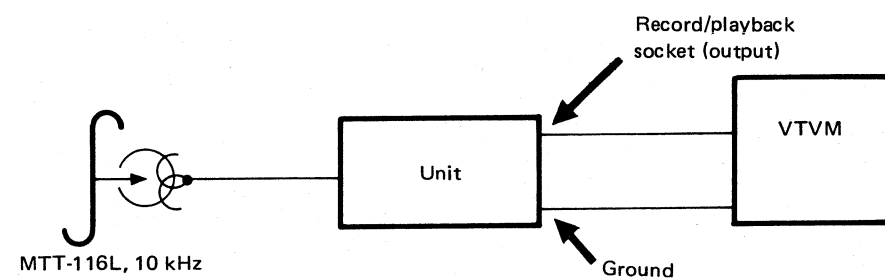


Adjustment: Set the record mode. Adjust RT401 so that the bias voltage of 7V is applied to the both terminals of Record/Playback head.

2. Head azimuth adjustment

Setting: Playback mode

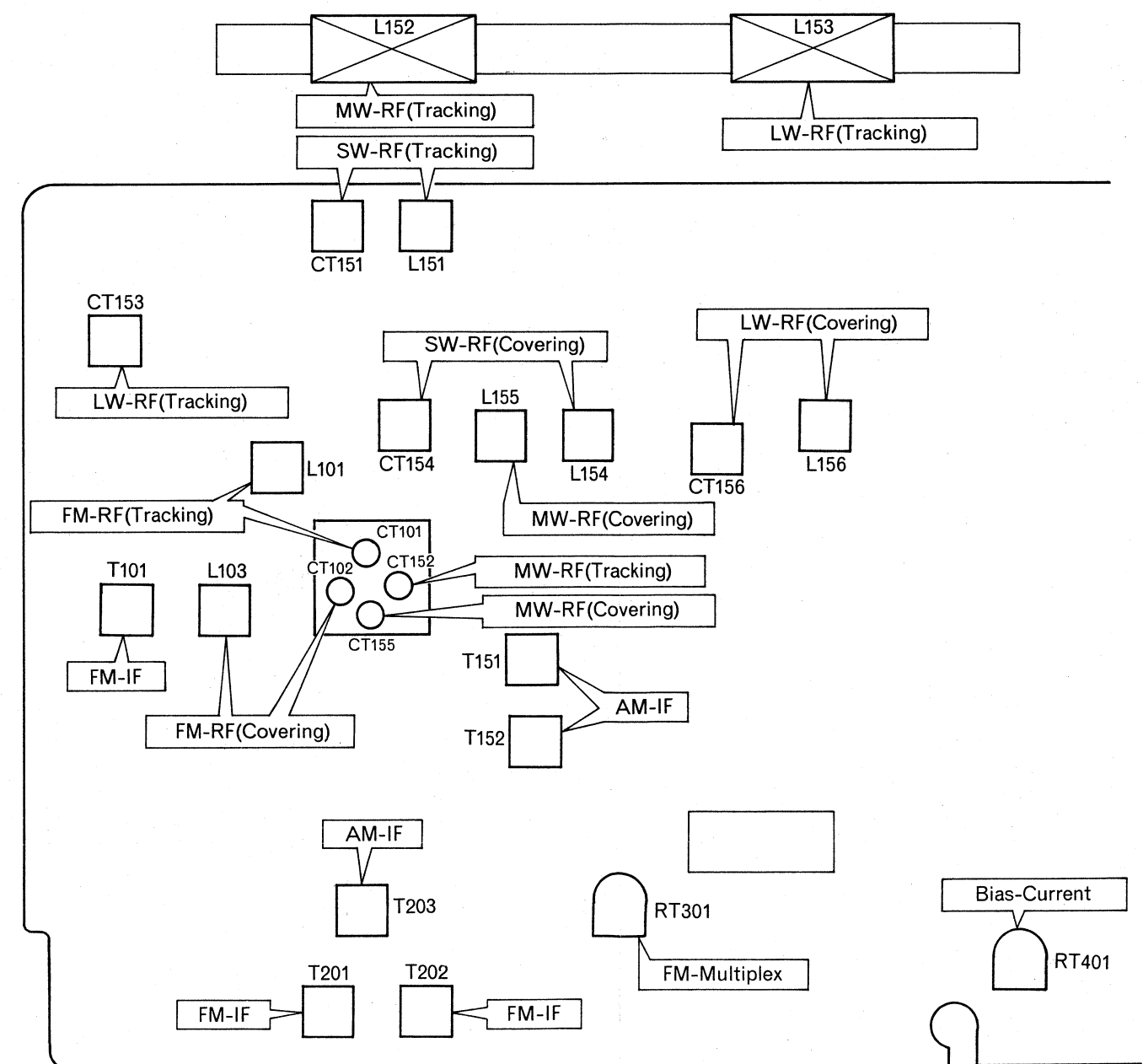
Connection:



Adjustment: Playback a test tape (MTT116L, 10 kHz) and adjust the azimuth adjustment screw for maximum output.

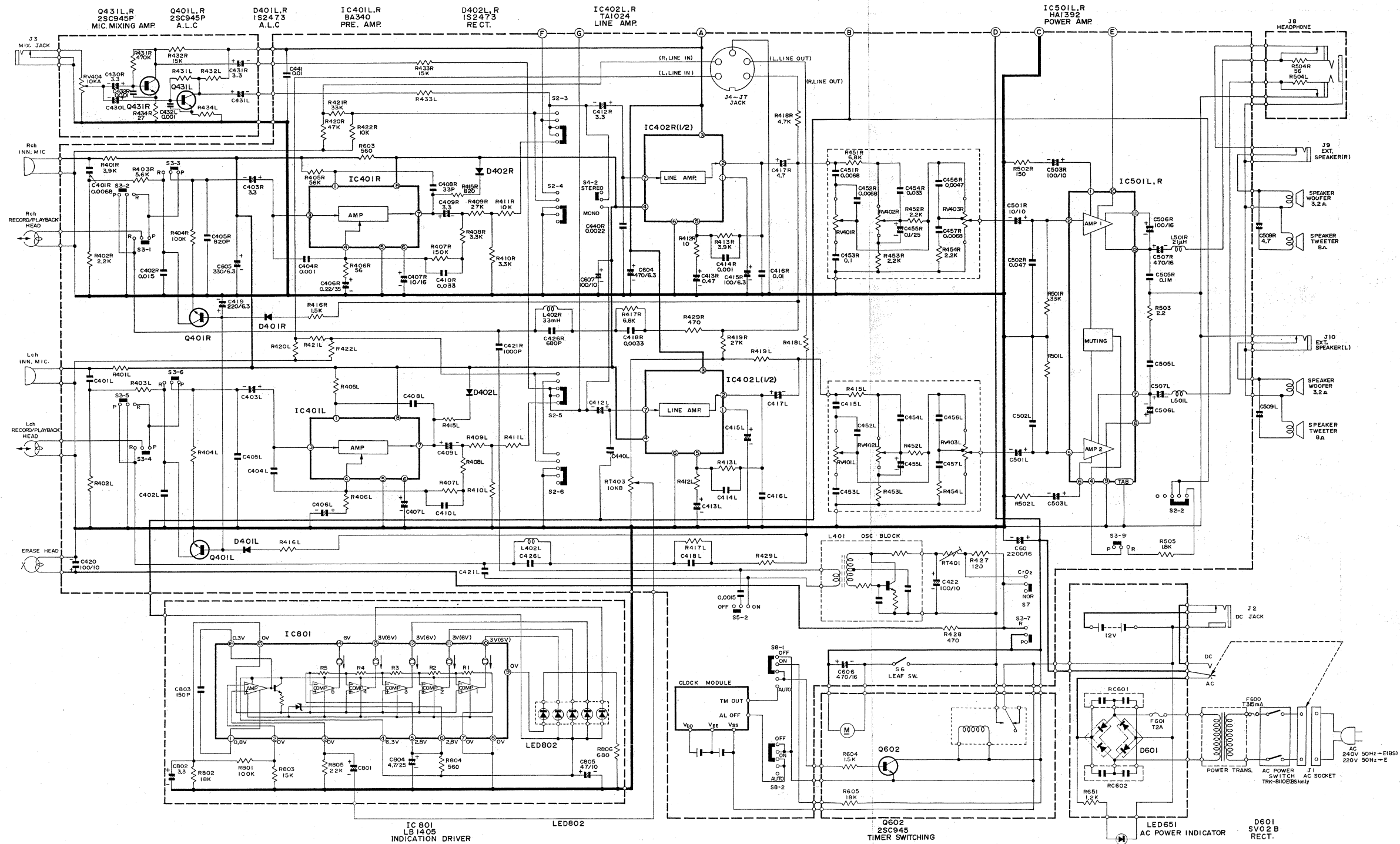
INSPECTION

| Mode | Item | Pressure or Torque |
|--------------|-----------------------------|--------------------|
| Playback | Pressure of pressure roller | 350 g 500g |
| | Take-up torque | 35g-cm 60g-cm |
| | Supply reel back tension | 1.5g-cm 3.5g-cm |
| Rewind | Rewind torque | 60g-cm 90g-cm |
| Fast Forward | Fast Forward torque | 65g-cm 90g-cm |

ADJUSTMENT PARTS LOCATION











SCHEMATIC DIAGRAM (Tape Recorder/AF/Power Section)



Note

1. Voltage measured at base of chassis with minimum volume control and no signal.
2. Nomenclature of Resistors and Capacitors.

| Circuit No. | | |
|---|-----------|---|
|  | Value | No indicated Ω (Ohm) M : 1000 kΩ |
| | Tolerance | No indicated ±5% K : ±10% M : ±20% |
| | Wattage | No indicated ¼W |
| | Sort | No indicated Carbon film RC : Composition RW : Wire wound RS : Oxide metal film RN : Fixed metal film |

| | | Circuit No. | | |
|--|-----------|--|--------------|--|
|  C101 0.001 · M | Value | No indicated μF P : PF | | |
| | Tolerance | No indicated $\pm 10\%$ J : $\pm 5\%$ M : $\pm 20\%$ Z : $+80\%$, -20% C : $\pm 0.5\text{pF}$ D : $\pm 0.25\text{pF}$ | | |
| | Sort |  | Ceramic | |
| | |  | Electrolytic | |
| | |  | Mylar | |
|  | | Polyester | | |
|  | | Styrol | | |
|  C102 0.1/16 | Voltage | No indicated 50WV | | |

3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with *, use specified ones stated on parts list since required temperature characteristics.

CIRCUIT BOARD DIAGRAM (MAIN P.C. Board)

: Ground

: Signal, +B

| | | | | | |
|---|-------|----|-------|----|-------|
| 1 | 1 V | 6 | 0 V | 11 | 5 V |
| 2 | 3.6 V | 7 | 0.7 V | 12 | 6.3 V |
| 3 | 6.3 V | 8 | 0.7 V | 13 | 3.6 V |
| 4 | 5 V | 9 | 0 V | 14 | 1 V |
| 5 | 0.2 V | 10 | 0.2 V | | |

| Q601 | |
|------|------|
| B | 6.8V |
| C | 9.5V |
| E | 6.3V |

| | | | |
|---|-------|---|-------|
| 1 | 1.8 V | 5 | 0 V |
| 2 | — | 6 | 0.5 V |
| 3 | 0.5 V | 7 | 2.1 V |
| 4 | 0 V | 8 | 5.0 V |

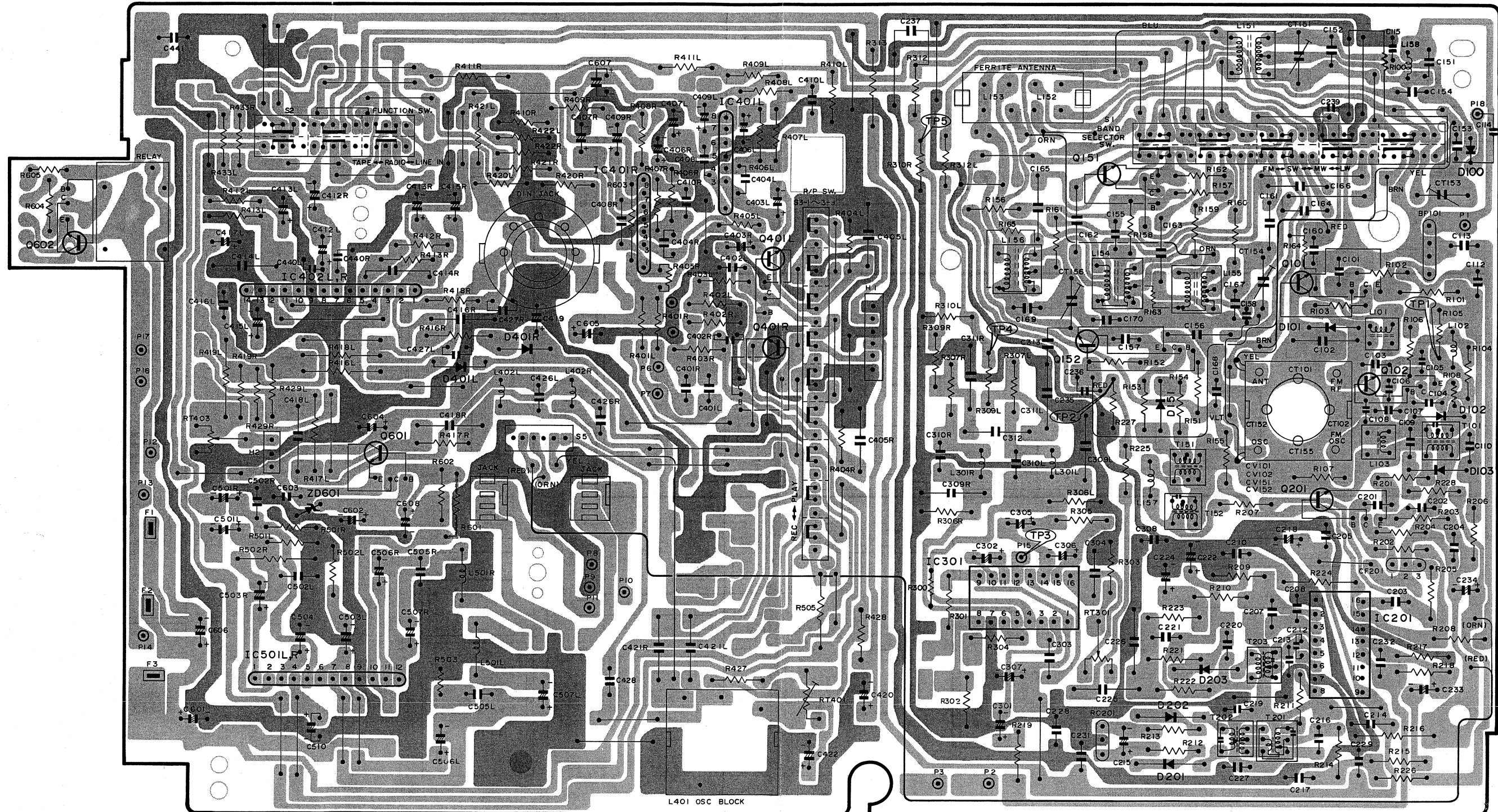
| | |
|---|-------|
| B | 0.2 V |
| C | 0 V |
| E | 0 V |

| Q152 | |
|------|-------|
| B | 1.6 V |
| C | 5.9 V |
| E | 0.9 V |

| Q151 | |
|------|-------|
| B | 1.6 V |
| C | 5.9 V |
| E | 0.9 V |

| Q101 | |
|------|-------|
| B | 1.5 V |
| C | 5.6 V |
| E | 0.8 V |

| Q102 | |
|------|-------|
| B | 1.5 V |
| C | 5.6 V |
| E | 0.8 V |

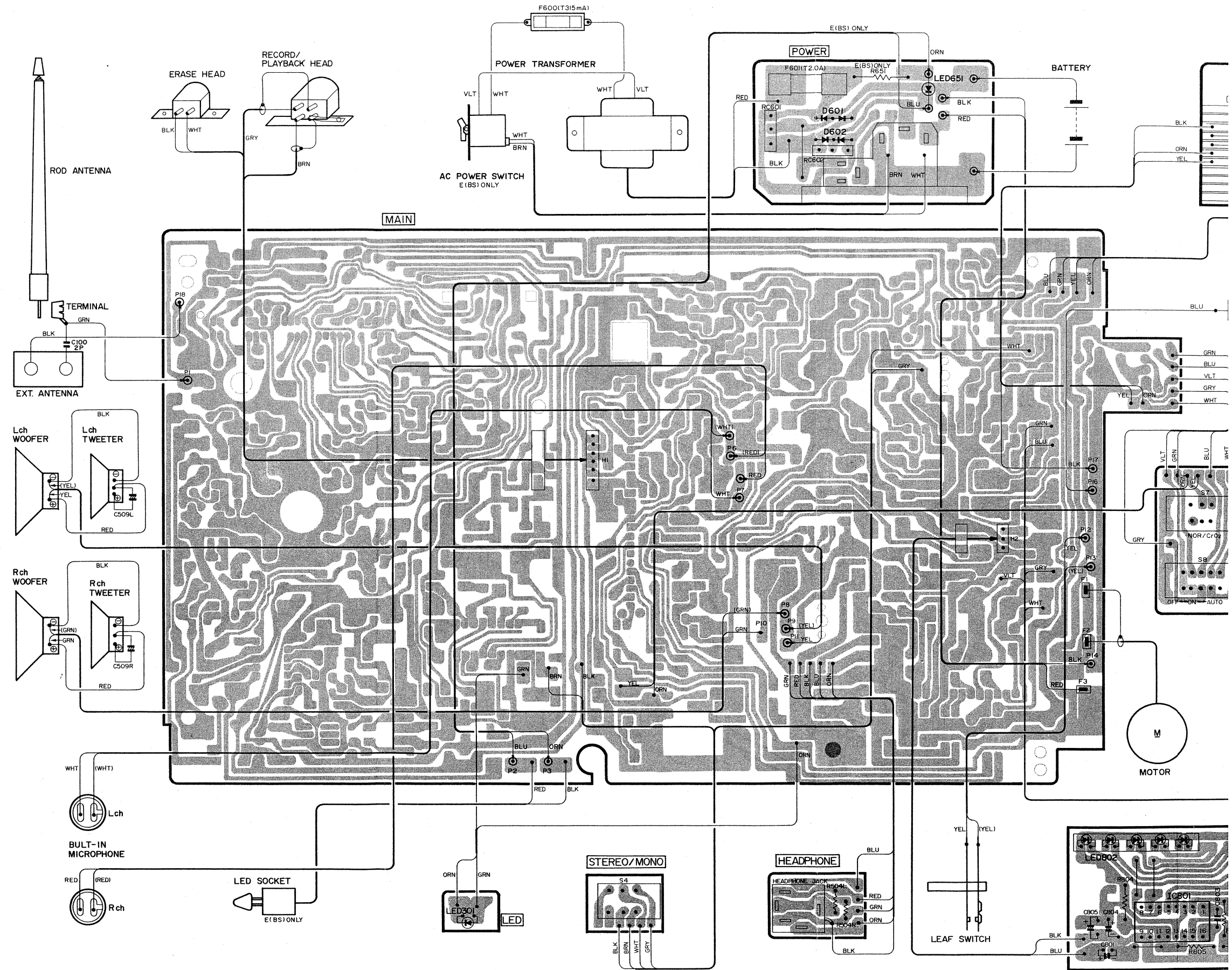


| | | | | | |
|---|-------|---|--------|----|--------|
| 1 | 0.6 V | 5 | 0 V | 9 | 0 V |
| 2 | 0 V | 6 | 0.6 V | 10 | 12 V |
| 3 | 4.7 V | 7 | 6 V | 11 | 11.5 V |
| 4 | 0 V | 8 | 11.5 V | 12 | 6.3 V |

| IC301 | | | | | | | IC201 | | | | | | | | |
|-------|-------|---|-------|----|-------|----|-------|---|-------|---|-------|----|-------|----|-------|
| 1 | 6 V | 5 | 1.5 V | 9 | 0.7 V | 13 | 1.6 V | 1 | 0.7 V | 5 | 1.8 V | 9 | 4 V | 13 | 5.2 V |
| 2 | 1.5 V | 6 | 5.5 V | 10 | 1.6 V | 14 | 1.6 V | 2 | 1.6 V | 6 | — | 10 | 5.9 V | 14 | 0.7 V |
| 3 | 1.9 V | 7 | 0 V | 11 | 1.6 V | 15 | 1.6 V | 3 | 0 V | 7 | — | 11 | 0.7 V | 15 | 0.4 V |
| 4 | 1.5 V | 8 | 0.2 V | 12 | 1.2 V | 16 | 2 V | 4 | 1.4 V | 8 | 5.6 V | 12 | 0.7 V | 16 | 0 V |

| Q201 | |
|------|-------|
| B | 1.6 V |
| C | 5.9 V |
| E | 0.9 V |

WIRING DIAGRAM

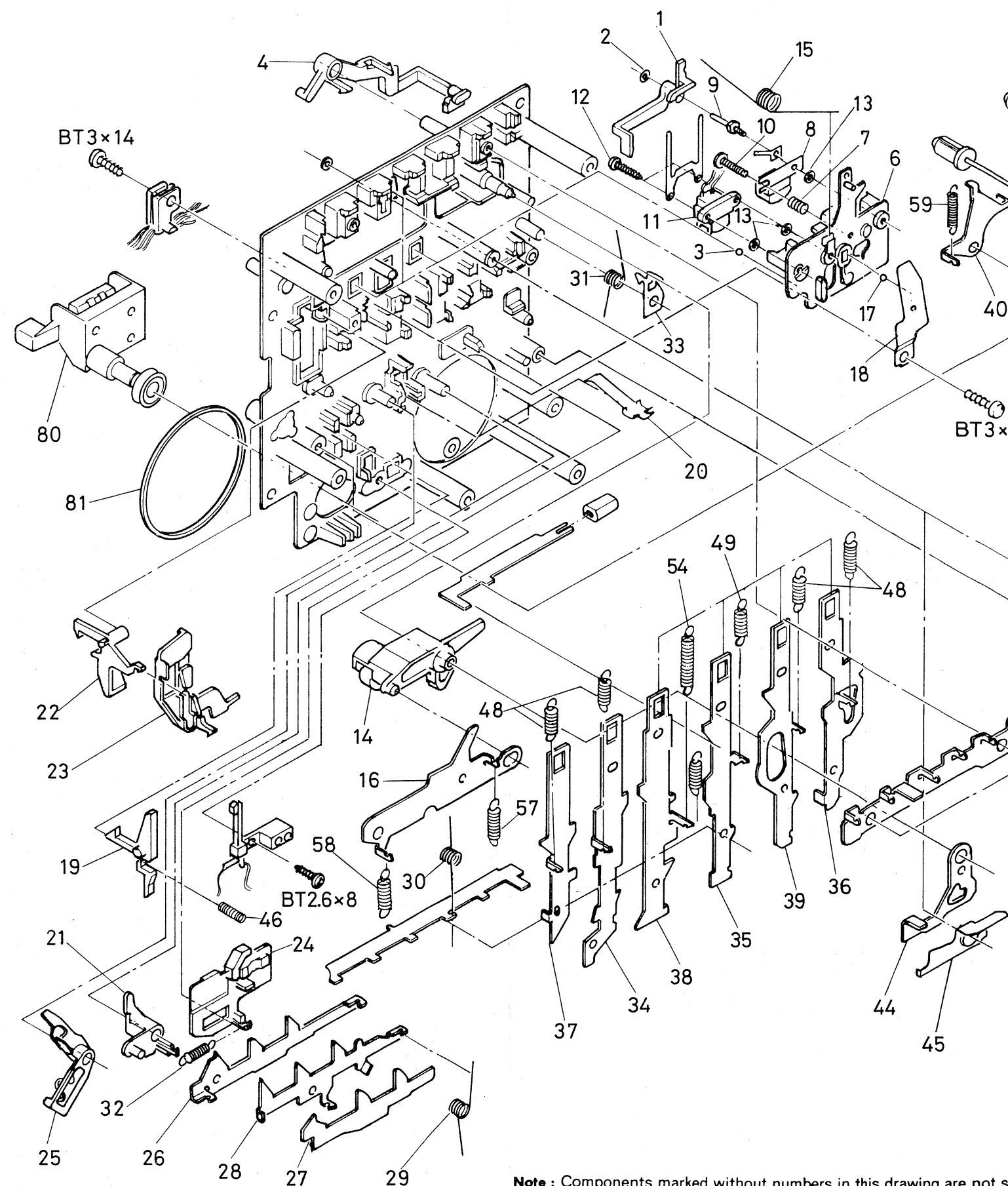




REPLACEMENT PARTS LIST

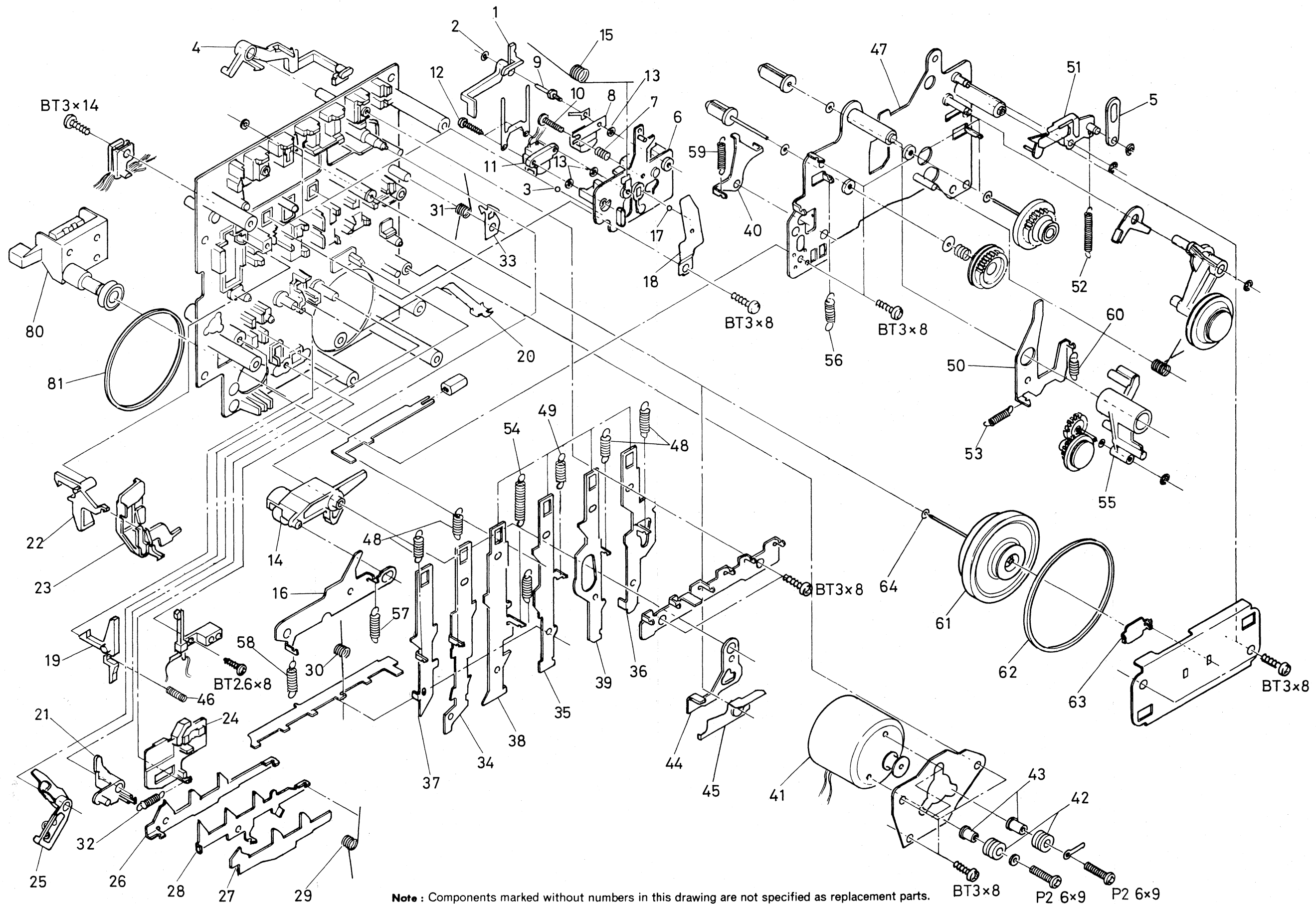
EXPLODED VIEW

| SYMBOL-NO | P-NO | DESCRIPTION | SYMBOL-NO | P-NO | DESCRIPTION |
|-----------------|---------|--|--------------|---------|---|
| CAPACITORS | | | D102 | 5330574 | DIODE 1S2473 |
| CT101 | 5052391 | PLASTIC FILM VARIABLE | D103 | 5330661 | DIODE SILICON LS2790 200MHZ 80MW |
| CT102 | 5052391 | PLASTIC FILM VARIABLE | D151 | 5330732 | DIODE GERMANIUM 1N60P 80MHZ 50MW |
| CT151 | 5058191 | TRIMMER 10PF | D201-203 | 5330732 | DIODE GERMANIUM 1N60P 80MHZ 50MW |
| CT152 | 5052391 | PLASTIC FILM VARIABLE | D401LR | 5330574 | DIODE 1S2473 |
| CT153 | 5058191 | TRIMMER 10PF | D402LR | 5330571 | DIODE 1S2473VE |
| CT154 | 5058191 | TRIMMER 10PF | D601 | 5330374 | DIODE SV-02B |
| CT155 | 5052391 | PLASTIC FILM VARIABLE | D602 | 5330373 | DIODE SV-01B |
| CT156 | 5058102 | VARIABLE CAPACITOR | IC201 | 5351064 | IC AN253BB |
| CV101 | 5052391 | PLASTIC FILM VARIABLE | IC301 | 5350684 | IC BA1330 |
| CV102 | 5052391 | PLASTIC FILM VARIABLE | IC401LR | 5350961 | IC BA340 |
| CV151 | 5052391 | PLASTIC FILM VARIABLE | IC402LR | 5357001 | IC TA1024 |
| CV152 | 5052391 | PLASTIC FILM VARIABLE | IC501LR | 5352141 | IC HA1392 |
| C102 | 0208132 | CERAMIC DISC (RESISTOR SHAPE) 18PF+ -5% | IC801 | 5359581 | IC LB1405 |
| C106 | 0246443 | CERAMIC CAPACITOR 13PF+-5% DC500WV | LED301 | 5380182 | LED LR0302R |
| C108 | 0248470 | CERAMIC DISC 10PF+-0.25PF (N-750) | LED601 | 5380241 | LED GL 3PR1 (BS) |
| C109 | 0246427 | CERAMIC DISC 7PF+-0.5PF(NP-0) | LED802 | 5380462 | LED LN05202P |
| C156 | 0209026 | CERAMIC DISC (RESISTOR SHAPE) 0.01M F+-30 | Q101 | 5321271 | TRANSISTOR SILICON 2SC1674L 600MHZ |
| C162 | 0209010 | CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10 | Q102 | 5321271 | TRANSISTOR SILICON 2SC1674L 600MHZ |
| C163 | 0209026 | CERAMIC DISC (RESISTOR SHAPE) 0.01M F+-30 | Q151 | 5321271 | TRANSISTOR SILICON 2SC1674L 600MHZ |
| C226 | 0209026 | CERAMIC DISC (RESISTOR SHAPE) 0.01M F+-30 | Q152 | 5321281 | TRANSISTOR SILICON 2SC1675-L 230MHZ 200M |
| C311LR | 0209024 | CERAMIC DISC (RESISTOR SHAPE) 4700P F+-30 | Q201 | 5321281 | TRANSISTOR SILICON 2SC1675-L 230MHZ 200M |
| C312 | 0209024 | CERAMIC DISC (RESISTOR SHAPE) 4700P F+-30 | Q401LR | 5320813 | TRANSISTOR 2SC945P |
| C405LR | 0209009 | CERAMIC DISC (RESISTOR SHAPE) 820PF +-10% | Q431LR | 5320813 | TRANSISTOR 2SC945P |
| C414LR | 0209010 | CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10 | Q601 | 5320922 | TRANSISTOR 2SC1368C |
| C416R | 0209026 | CERAMIC DISC (RESISTOR SHAPE) 0.01M F+-30 | Q602 | 5322213 | TRANSISTOR 2SC1741R |
| C418LR | 0209023 | CERAMIC DISC (RESISTOR SHAPE) 3300P F+-30 | ZD601 | 5330844 | ZENER DIODE RD7.5EB |
| C421LR | 0209010 | CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10 | TRANSFORMERS | | |
| RESISTORS | | | △ PT | 5211736 | POWER (BS) |
| RC201 | 0186357 | CR PACK | △ PT | 5212181 | POWER |
| RC601 | 0186451 | CR PACK | T101 | 5140071 | FM IFT |
| RC602 | 0186451 | CR PACK | T151 | 5130153 | AM IF |
| RT301 | 0151808 | SEMI VARIABLE 10K OHM RS88 | T152 | 5130121 | AM IFT |
| RT401 | 0151806 | SEMI VARIABLE 1KOHM B | T201 | 5148111 | FM DISCRIMINATOR |
| RT403 | 0151808 | SEMI VARIABLE 10K OHM RS88 | T202 | 5148112 | FM DISCRIMINATOR |
| RV401LR | 5000043 | VARIABLE 10KOHM(3B) | T203 | 5130122 | AM IFT |
| RV402LR | 5000042 | VARIABLE 10KOHM(A) | COILS | | |
| RV403LR | 5000731 | VARIABLE RESISTOR 20KOHM(3B) | L101 | 5126006 | FM RF COIL 0.5 MICROH |
| RV404 | 5000401 | VARIABLE 10KOHM(A) | L102 | 5126391 | FM |
| SEMI-CONDUCTORS | | | L103 | 5126362 | FM-OSC |
| D100 | 5330571 | DIODE 1S2473VE | L151 | 5123493 | SWITCH ANTENNA |
| D101 | 5330574 | DIODE 1S2473 | L152 | 5113481 | FERRITE ANTENNA |
| | | | L153 | 5113481 | FERRITE ANTENNA |
| | | | L154 | 5123494 | SW OSC |
| | | | L155 | 5120319 | OSCILLATOR COIL |
| | | | L156 | 5120465 | LW OSC |
| | | | L157 | 5152091 | CHOKE 180MICRO H |



Note : Components marked without numbers in this drawing are not s

EXPLODED VIEW



Note : Components marked without numbers in this drawing are not specified as replacement parts.

| SYMBOL-NO | P-NO | DESCRIPTION | SYMBOL-NO | P-NO | DESCRIPTION |
|--------------------------------|---------|-------------------------|-----------|---------|------------------------------|
| COILS | | | 9 | 7545533 | SPECIAL SCREW |
| L158 | 0333116 | CHOKE COIL | 10 | 7781004 | SCREW |
| L301LR | 5150571 | CHOKE COIL 33MH | 11 | 5445101 | ERASE HEAD |
| L401 | 5260641 | OSCILLATOR BLOCK | 12 | 7780913 | TAPPING SCREW-2MMDX10MM |
| L402LR | 5150571 | CHOKE COIL 33MH | 13 | 7778183 | POLYESTER WASHER |
| L501LR | 5150761 | CHOKE COIL | 14 | 6383142 | PRESSURE ROLLER ARM ASSEMBLY |
| MISCELLANEOUS | | | 15 | 6307741 | SPRING |
| △ | 5310401 | CLOCK MODULE (LX-3412H) | 16 | 7286182 | PR LEVER |
| | 5653241 | AC-DC SOCKET | 17 | 0948492 | BALL - 2MMD |
| | 5658071 | LED SOCKET (BS) | 18 | 6329637 | HEAD PLATE HOLDER |
| | 5659121 | BACK COVER | 19 | 6741103 | RECORDING PREVENTION ARM |
| ANT | 5752461 | ROD ANTENNA | 20 | 6530471 | CASSETTE HOLDER |
| BP101 | 5161551 | FILTER | 21 | 6756261 | BRAKE FUNCTION ARM |
| CF201 | 5160301 | CERAMIC FILTER 10.7MHZ | 22 | 6740982 | EJECT ARM |
| FM ANT J | 5671661 | FM ANTENNA TERMINAL | 23 | 6741186 | EJECT SLIDER |
| F600 | 5720171 | FUSE | 24 | 6756331 | AUTO STOP FUNCTION PLATE |
| F601 | 5720177 | FUSE 2A | 25 | 6741712 | SWITCH FUNCTION ARM |
| J 3 | 5673081 | JACK (MIX MIC) | 26 | 7287692 | SW PLATE |
| J 4-7 | 5653211 | DIN JACK | 27 | 7297951 | RC PLATE |
| J 8 | 5674131 | HEADPHONE JACK | 28 | 7288494 | FUNCTION PLATE |
| J 9 | 5673261 | JACK-3.5MMD | 29 | 6308102 | SPRING |
| J10 | 5673261 | JACK-3.5MMD | 30 | 6307733 | SPRING |
| MIC | 5421508 | BUILT IN MICROPHONE | 31 | 6307711 | SPRING |
| RL | 5641171 | RELAY | 32 | 6300375 | SPRING FOR RECORDING PLATE |
| S 1 | 5625011 | SLIDE SWITCH | 33 | 7286241 | PAUSE LOCK PIECE |
| S 2 | 5620501 | SWITCH-SLIDE | 34 | 7297851 | RECORDING SLIDER (B) |
| S 3 | 5623431 | SLIDE SWITCH | 35 | 7297841 | REWIND SLIDER (B) |
| S 4 | 5634158 | PUSH SWITCH | 36 | 7286042 | PAUSE SLIDER ASSEMBLY |
| S 5 | 5621184 | SLIDE SWITCH | 37 | 7297831 | STOP SLIDER (B) |
| S 6 | 5603231 | LEAF SWITCH | 38 | 7297491 | PLAY SLIDER (B) |
| S 7 | 5604082 | LEVER SWITCH | 39 | 7297481 | FAST FORWARD SLIDER (B) |
| S 8 | 5604092 | LEVER SWITCH | 40 | 7286193 | RECORDING LOCK LEVER |
| SP | 5401121 | SPEAKER-5CM | 41 | 7109503 | MOTOR ASSEMBLY |
| SP | 5406412 | SPEAKER-12CM | 42 | 6576083 | RUBBER PLATE |
| S601 | 5602021 | SEESAW SWITCH (BS) | 43 | 5681371 | COLLAR |
| FOR ACCESSORIES | | | 44 | 7287819 | RC LEVER |
| △ | 5747321 | POWER CORD | 45 | 7311142 | FF FUNCTION LEVER |
| △ | 5746341 | CORD ASSEMBLY (BS) | 46 | 6304161 | SPRING |
| | 5896391 | FM ANTENNA (BS) | 47 | 7109492 | TURNTABLE HOLDER ASSEMBLY |
| FOR CASSETTE DECK ASSEMBLY (A) | | | 48 | 6300375 | SPRING FOR RECORDING PLATE |
| 1 | 6752792 | PICK UP PIECE | 49 | 6324814 | SPRING |
| 2 | 7786115 | POLYESTER WASHER | 50 | 7286031 | FR LEVER |
| 3 | 0948492 | BALL - 2MMD | 51 | 7317881 | SETTING OFF LEVER ASSEMBLY |
| 4 | 6752801 | PICK UP LEVER | 52 | 6302957 | SPRING |
| 5 | 7311882 | JOINT PLATE | 53 | 6301101 | SPRING |
| 6 | 7105836 | HEAD PLATE | 54 | 6301233 | SPRING |
| 7 | 6321734 | SPRING | 55 | 7109603 | FF,REWIND ARM ASSEMBLY |
| 8 | 5444761 | RECROD PLAYBACK HEAD | 56 | 6300981 | SPRING |

| SYMBOL-NO | P-NO | DESCRIPTION | SYMBOL-NO | P-NO | DESCRIPTION |
|---------------------------------------|---------|---|-----------|---------|--------------------------------------|
| FOR CASSETTE DECK ASSEMBLY (A) | | | 86 | 6296381 | SWITCH KNOB |
| 57 | 6301361 | SPRING | 87 | 7765871 | SPACER |
| 58 | 6323064 | SPRING | 88 | 6051633 | PUSH BUTTON (MODE) |
| 59 | 6301721 | SPRING | 89 | 6287513 | KNOB-16MMD |
| 60 | 6300996 | SPRING | 90 | 6289231 | KNOB-21MMD |
| 61 | 6373281 | FLYWHEEL ASSEMBLY | 91 | 6282687 | KNOB-20MMD |
| 62 | 6354211 | BELT | 92 | 6334121 | HANDLE ASSEMBLY |
| 63 | 6743884 | THRUST SUPPORT | 93 | 6756861 | HANDLE PIECE |
| 64 | 7786621 | POLYSLIDER WASHER | 94 | 6570221 | MICROPHONE HOLDER |
| FOR CASSETTE DECK ASSEMBLY (B) | | | 95 | 6282993 | KNOB-14MMD |
| 65 | 6756952 | CHASSIS ASSEMBLY | 96 | 7781148 | BT SCREW-3MMDX50MM |
| 66 | 6316231 | SPRING M | 97 | 8699410 | BT BIND HEAD SCREW-3MMDX10MM (BLACK) |
| 67 | 6394412 | POINTER | 98 | 6033781 | FRONT CASE ASSEMBLY |
| 68 | 6345594 | PULLEY-100MMD | 99 | 6033782 | FRONT CASE ASSEMBLY (BS) |
| 69 | 7781146 | BT SCREW-3MMDX20MM | 100 | 6052683 | PUSH BUTTON (LCD) |
| 70 | 6756851 | STUD | 101 | 6533262 | SPRING FOR LCD BUTTON |
| 71 | 6750821 | EXCHANGE LEVER | 102 | 6092441 | CASSETTE LID ASSEMBLY |
| 72 | 6750822 | EXCHANGE LEVER | 103 | 7781133 | BT SCREW-3MMD |
| 73 | 6756831 | LEVER HOLDER | 104 | 7781134 | BINDING SCREW |
| 74 | 6750851 | ARM (BAND SELECT) | 105 | 6033811 | REAR CASE ASSEMBLY |
| 75 | 6750846 | LEVER (BAND SELECT) | 106 | 6033812 | REAR CASE ASSEMBLY (BS) |
| 76 | 6756901 | FUNCTION SLIDER | 107 | 6173452 | BATTERY LID ASSEMBLY |
| 77 | 6750872 | LEVER (FUNCTION) | 108 | 5687142 | CAP TERMINAL |
| 78 | 6467734 | SCALE PLATE | 109 | 8744414 | BIND SCREW-3MMDX14MM |
| 79 | 7312812 | RECORD SPRING ASSEMBLY | 110 | 6308961 | SPRING |
| 80 | 5559311 | COUNTER | 111 | 6545651 | BATTERY TERMINAL |
| 81 | 6354471 | COUNTER BELT | 112 | 6329722 | BATTERY TERMINAL |
| 82 | 6257643 | BUTTON ASS.(REC) | 113 | 6756891 | TERMINAL HOLDER |
| 83 | 6257644 | BUTTON ASS.(PAUSE,FF,REW,PLAY,STOP/EJECT) | 114 | 6303483 | SPRING |
| MISCELLANEOUS | | | 115 | 7451161 | BATTERY TERMINAL |
| 84 | 6282732 | KNOB (TUNING) | 116 | 6746902 | SWITCH COVER (BS) |
| 85 | 6282701 | KNOB ASSEMBLY | | | |

| Type of head | | | |
|-----------------|-----------------------------|----|----------------------------|
| P | Pan head screw | BT | Binding head tapping screw |
| F | Flat countersunk head screw | BL | Bolt |
| B | Binding head screw | W | Washer |
| T | Round head tapping screw | E | "E" ring |
| Length (L mm) | | | |
| Diameter (D mm) | | | |

When ordering hardware excluding stated on these lists, be sure to make your orders with type and size.

8. A-K10 Schematic Diagram

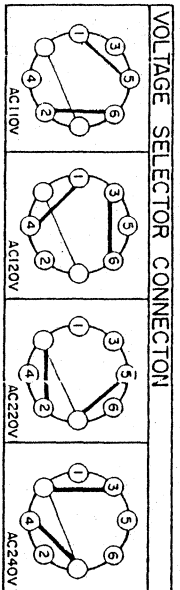
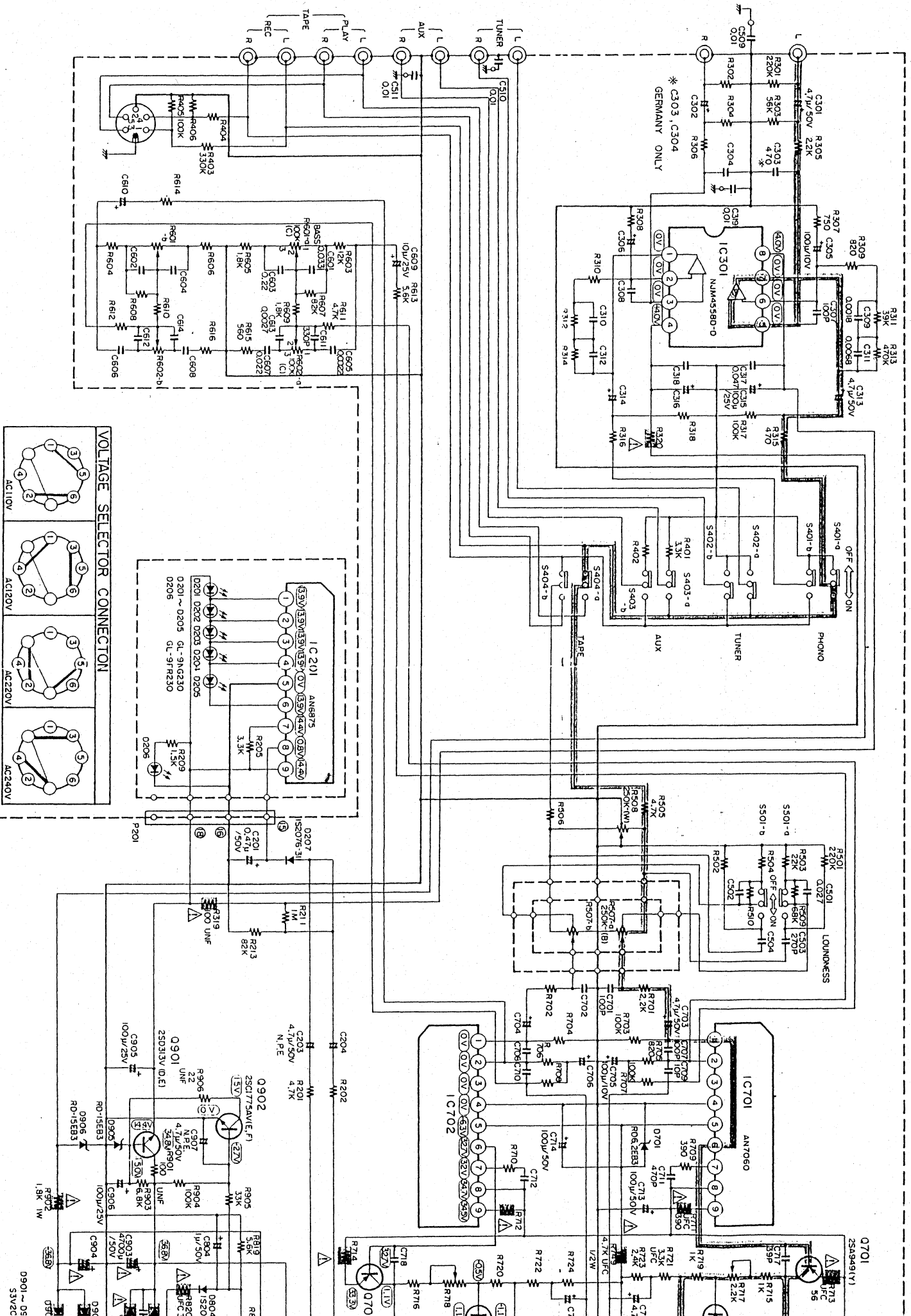
A

B

C

D

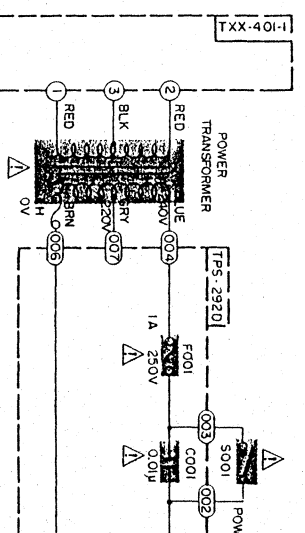
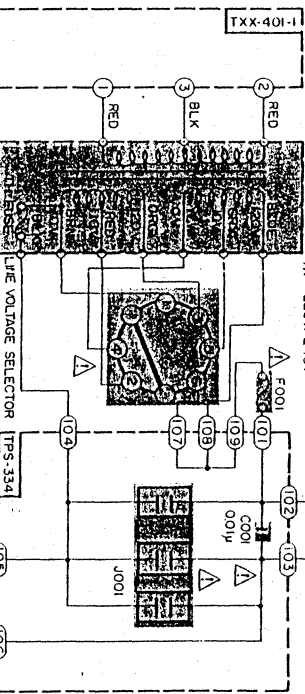
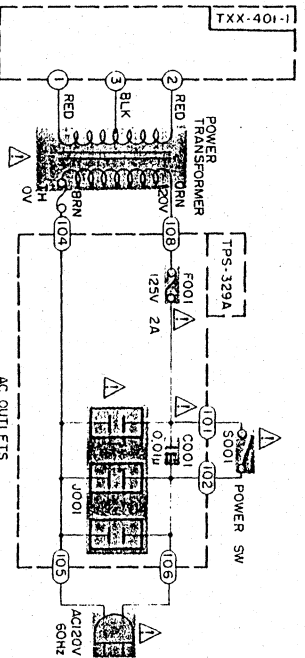
S 901 -464 = QST HHA2-ES01



(J) FOR USA (C) FOR CANADA AC120V 60Hz

(U) FOR OTHER COUNTRIES (P) FOR US MILITARY AC120V

(BS) FOR UK. (A) FOR AUSTRALIA AC240V ~



| P.C. Board Ass'y | Description | Page |
|------------------|----------------------------|------|
| TPX-401A/B/C/D | Main Amp. P.C. Board Ass'y | 6 |
| TPS-292C/DBS | AC P.C. Board Ass'y | 9 |
| TPS-334A | " | 9 |
| TPS-329A | " | 9 |

Printed Circuit Board Ass'y Locations

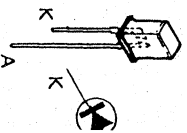
A

B

C

D

- Notes:
1. Voltage values in are positive.
 2. Voltage values in are negative.
 3. XXXX indicates signal path.
 4. When replacing the parts in the darkened area (XXXX) and those marked with , be sure to use the designated parts to ensure safety.
 5. Parts in red indicate transistors or ICs.
 6. This is the standard circuit diagram.
- The design and contents are subject to change without notice.

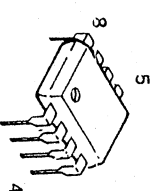
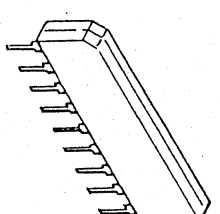
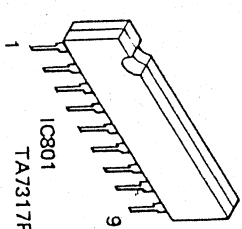


D201 ~ D202
GL-9NG2
D206
GL-9PR2

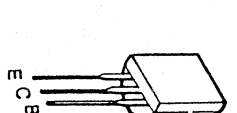
D

E

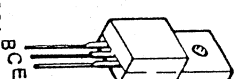
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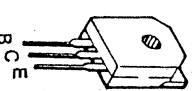
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0801, 802
2SC1775AV (E,F)
0803
2SA872 (E)
0902
2SC1775AV (E,F)



0701, 702
2SA949 (Y)
0705, 706
2SC2235 (Q,Y)
0707, 708
2SA965 (Q,Y)



0901
— 2SD313V (D,E)



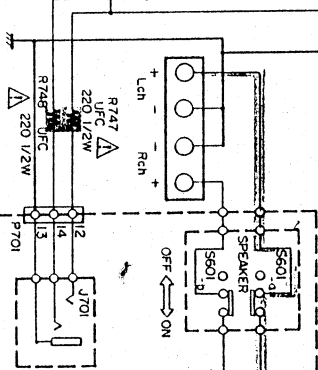
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2SD716 (R,Q)
0711, 712
2SB686 (R,Q)

2

1

3

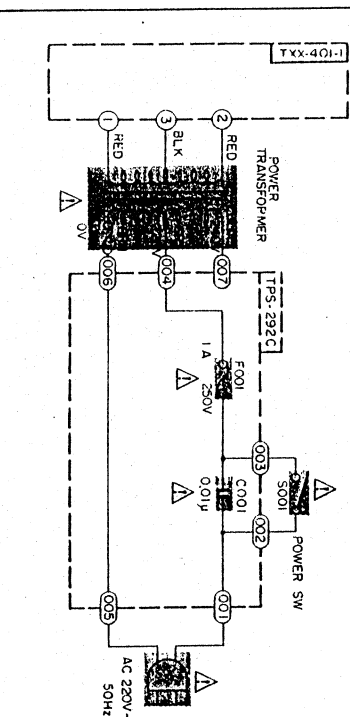
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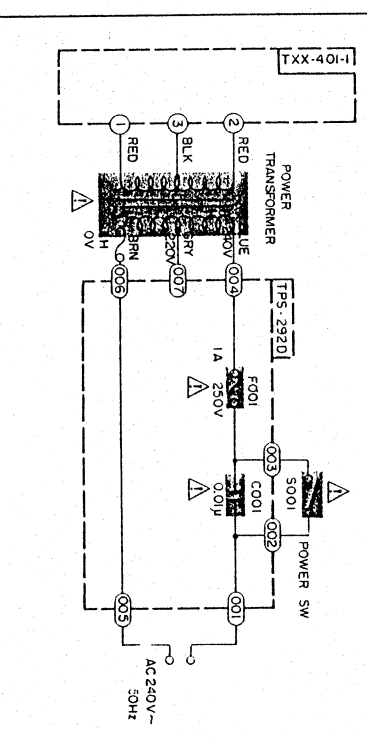
* C901
U.K.
AUSTRIA
U.S. MILITARY MARKET
& OTHER COUNTRIES] 0.47
GERMANY

USA
CANADA] 0.01

(E) FOR CONTINENTAL EUROPE (G) WEST GERMANY AC220V~
50Hz



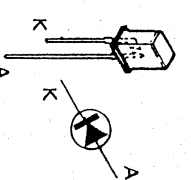
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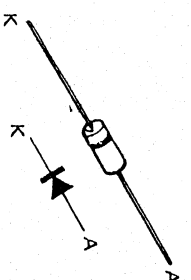
D

E

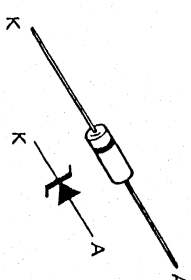
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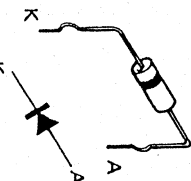
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GL-9NG230
D206
GL-9PR230



D801 ~ D804
1S2076-31



D905, 906
RD-15EB3



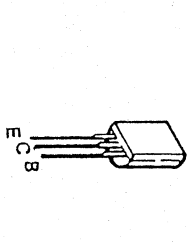
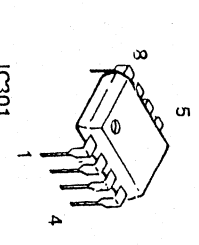
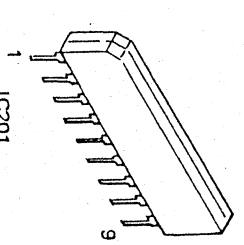
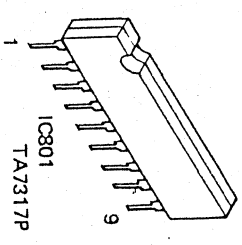
D901 ~ D904
S3V20F

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range without

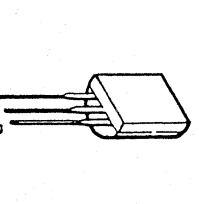
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E

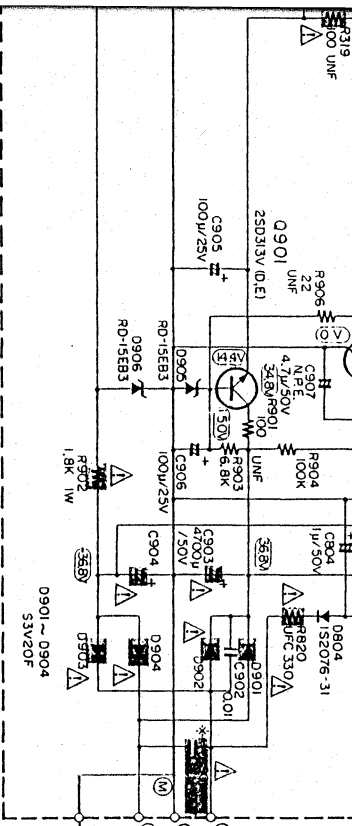
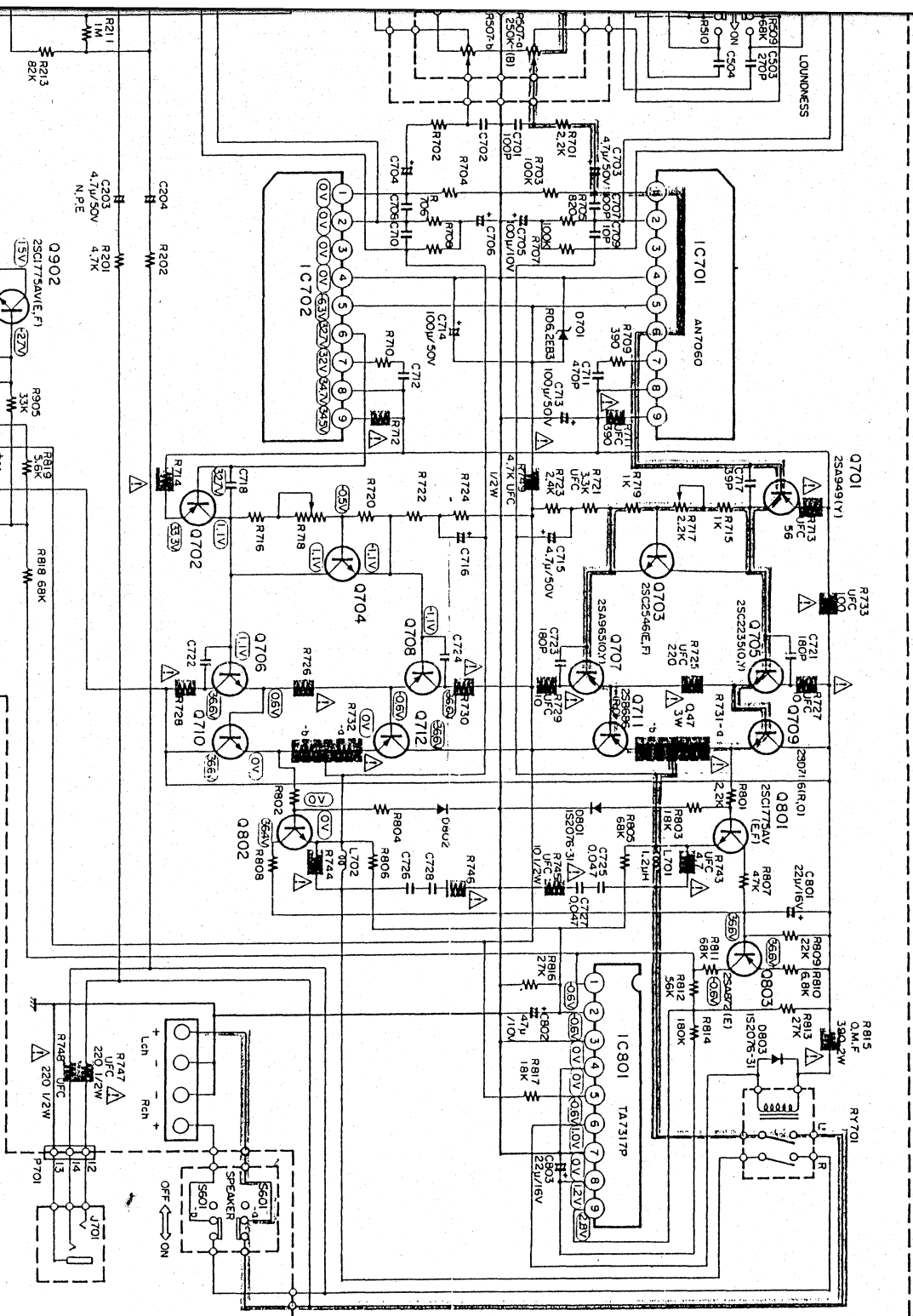
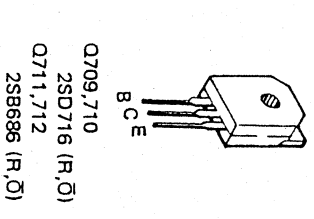
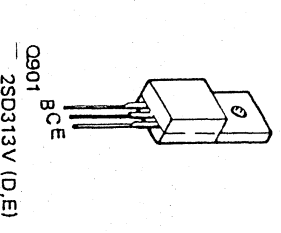
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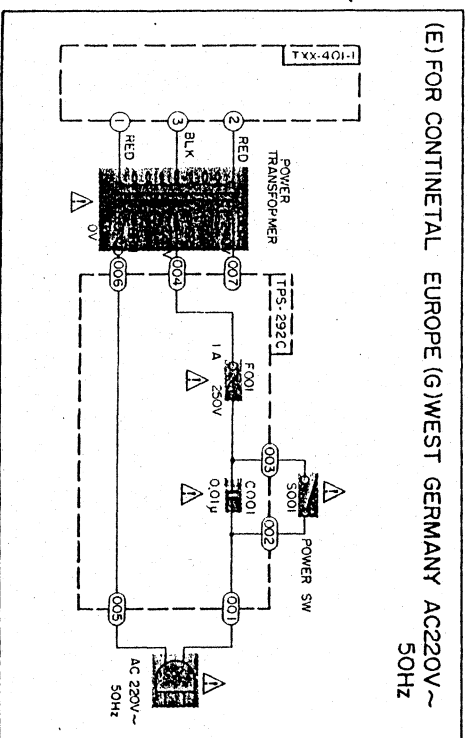
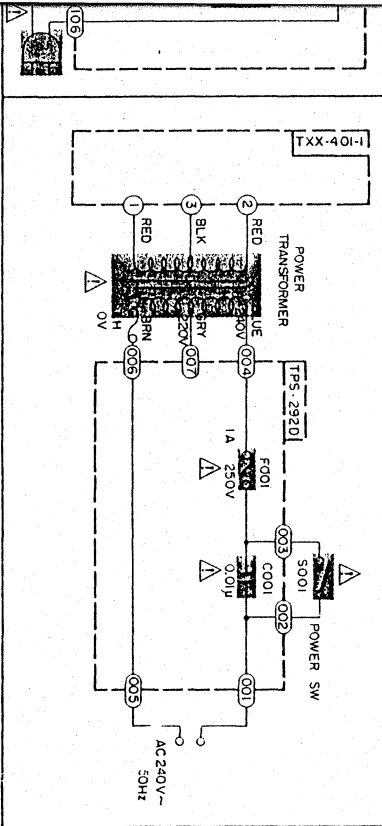
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2SC2546 (E, F)
Q801, 802
2SC1775AV (E, F)
Q803
2SA872 (E)
Q902
2SC1775AV (E, F)



Q701, 702
2SA949 (Y)
Q705, 706
2SC2235 (Q, Y)
Q707, 708
2SA965 (Q, Y)



(BS) FOR U.K. (A) FOR AUSTRALIA AC240V ~ 50Hz



(E) FOR CONTINENTAL EUROPE (G) WEST GERMANY AC220V ~ 50Hz

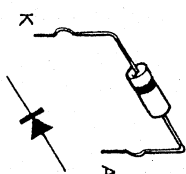
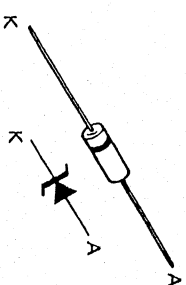
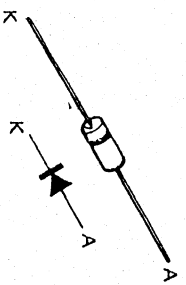
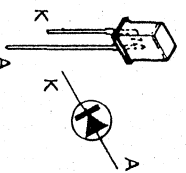
* C901
U.K.
AUSTRALIA
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& OTHER COUNTRIES
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USA
CANADA] 0.01

D

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F



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range without

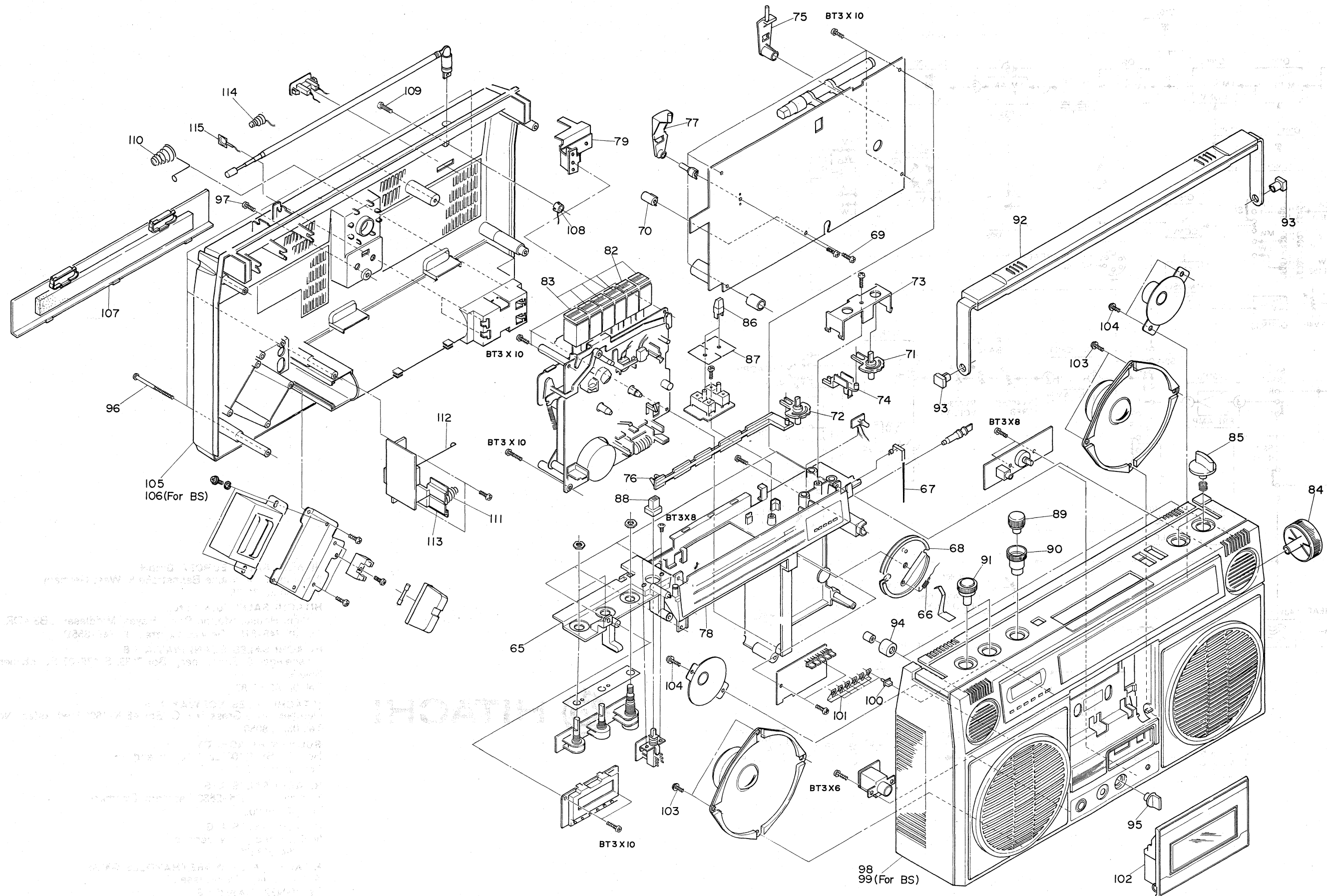
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D206
GL-9PR230

D801 ~ D804
1S2076-31

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RD-15EB3

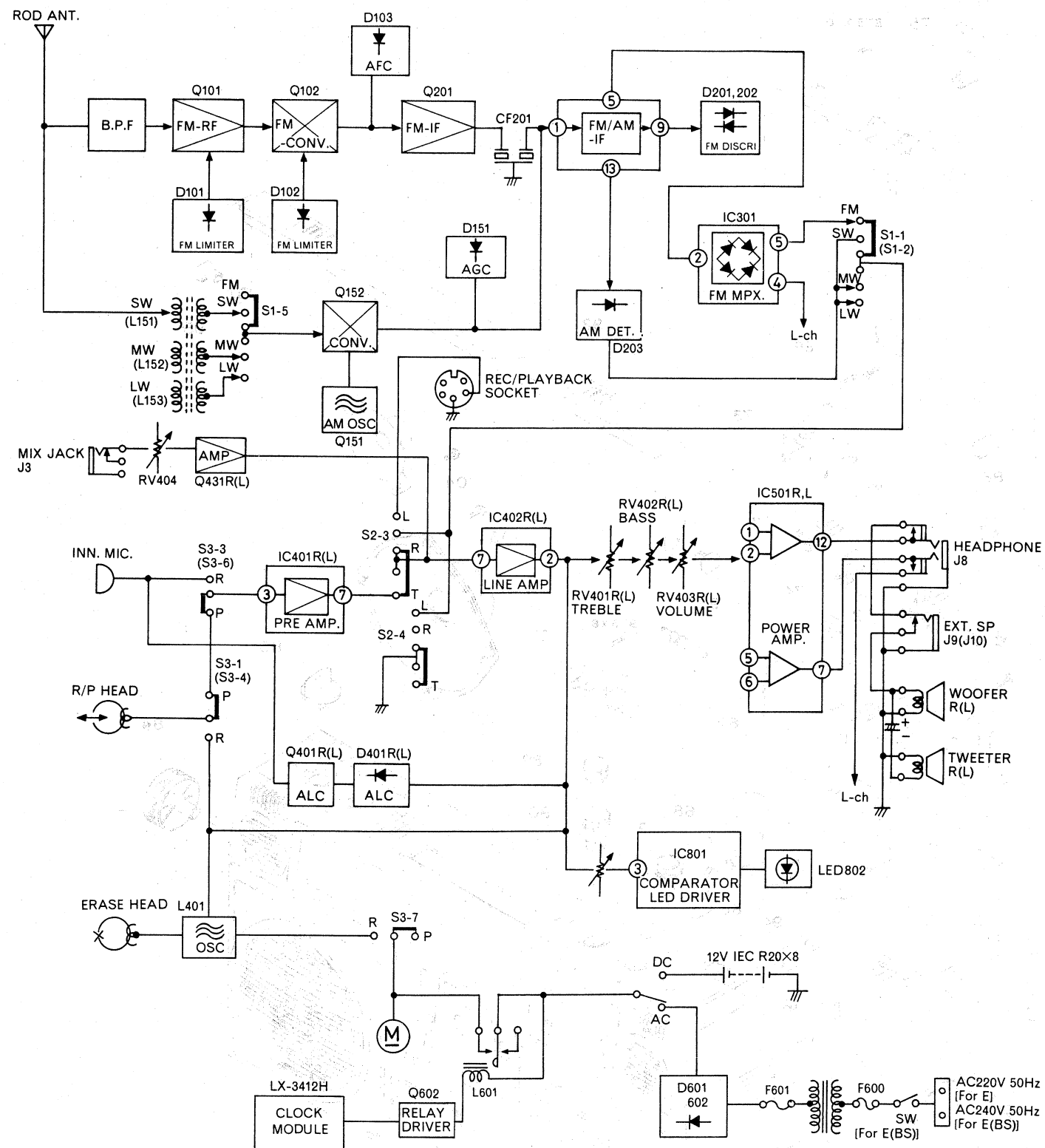
D901 ~ D904
S3V20F

EXPLODED VIEW



BLOCK DIAGRAM

EXPLODED VIEW



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